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ABSTRACT

The Halliday and Hasan (1976) method of categorizing semantic units was used to analyze the cohesive strategies used by secondary students learning English as a second language. The method involves classifying and charting the network of semantic relationships, the types of cohesive devices, and the number of breaks in the flow of a text or discourse. The major types of cohesive devices include reference, substitution, ellipsis, conjunction, and lexical items. Samples of text and discourse from ninth graders and the application of the method to these texts are provided. Analysis of student texts yields information on students' ability to produce explanations in terms of number of cohesive relations, distances between cohesive items, deviant cohesive forms, and problem areas. Although this method is too time consuming to be used as a classroom tool, it can provide researchers with information on both errors and mastery of cohesive devices. (RW)

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COHESIVE CHARACTERISTICS OF SAMPLE TEXTS PRODUCED BY SECONDARY BILINGUAL STUDENTS

by
Betty R. Sunday

ABSTRACT

The Halliday and Hasan (1976) method of categorizing semantic units is used to reveal where and how the internal system of ties is formed within a discourse (or textual) unit. This method also uncovers any breaks that may occur in the system of semantic relationships.

Secondary bilingual students were tested in the writing and speaking of explanatory text. Samples from this data are presented with a focus on the kind of cohesive strategies used by the Subjects and problems that occured.

A large body of research on first and second language learning has accumulated over the past decade. However, in spite of the availability of a great amount of information of this nature, relatively little work has been directed toward a description of the kind of langugage performance found among older bilingual children, especially of the junior and senior high school ages. We know that at this higher level of learning, the student is expected to communicate academic material through spoken and written text. In other words, the secondary student needs to be able to produce full explanations in areas such as the social sciences and the physical sciences. No description of how this group was performing at the explanatory textual level was available in the literature when this writer began a search some three years ago. In order to gain information of this kind, research was begun on the problem of describing

language of an explanatory nature at the discourse level, both spoken and written, with a selected group of secondary bilingual students. This paper is derived from that investigation.

The research was concerned with finding a method whereby an integral network of semantic parts, called a text or discourse unit, could be described. The method would have to allow an examination of the relationships which occur between various semantic features and an examination of any impediments in message flow which might occur in the data. By use of the method, a description of language performance at the discourse level for a group of secondary bilingual Subjects would result.

Principally, the purpose of this paper is to demonstrate a method that reveals how bilingual high school students used the strategy of selecting cohesive devices (that is, a set of semantic ties) to perform a written task and an oral task, both of an explanatory textual nature. Samples of actual data elicited from 15-year-old students in the second semester of the ninth grade will be used for the demonstration.

The Source and Definition of Terms

The main source which furnishes the background for the method of textual analysis to be presented is Cohesion in English (1976) by M.A.K. Halliday and Ruquaiya Hasan, published by Longman.

To aid in understanding the cohesive process, let us define the following terms as they are used in this study.

1. Text: In the beginning pages of Cohesion in English, text is defined as "a 'semantic' unit: a unit not of form but of meaning" (p. 2). A text is distinguished from a group of unrelated sentences by its texture. It may be a spoken or written text, prose or verse, dialogue or monologue.

In size, "it may be anything from a single proverb to a whole play, from a momentary cry for help to an all-day discussion on a committee" (p. 1).

(It may be of help at this point to say that the two terms, discourse and text, are synonymous but usually analyzed from different viewpoints. Discourse has been analyzed from the speech act approach and text from the interpropositional approach.)

2. Cohesion: Cohesion results from a system of cross-references between semantic items within a text. These may cross grammatical class lines; that is, a verb and a noun can be semantically related, e.g., 'build' and 'building'. Halliday and Hasan explain cohesion by developing a taxonomy of the types and subtypes of English Language cohesive devices. By separating types of cohesive items into groups according to their common cohesive properties within a text, these authors show how a text is built up by a speaker or writer. The semantic items selected from a category form a tie between propositions. The categorical ties within a text form a system of unification. The main type-groups in Halliday and Hasan's taxonomy are Reference, Substitution, Ellipsis, Conjunction and Lexical. Cohesive items in each category refer back (anaphorically)to semantically related items,and textual cohesion results.

3. Anaphoric reference: The only direction of reference with which we are concerned here is anaphoric, or reference back to an item in a previous sentence. This will be illustrated as we go further into our definitions.

4. Presupposed item: the antecedent(s) in a previous sentence or sentences to which an item has a semantic tie. (This differs from the way presupposed is used in pragmatics to refer to knowledge shared by all

participants and therefore remaining unstated. In this work, the meaning of presupposition as used in Cohesion in English (1976) by Halliday and Hasan will be applied to all discussion and analysis.) The presupposition does not always occur between items in contiguous sentences. There can be one or more intervening sentences that enter into a chain of presupposition, or there can be a distance of one or more intervening sentences that stand between the presupposing and the presupposed items.

5. The Halliday and Hasan categories of cohesive devices: The communicative strategy that we are concerned with here is the use of cohesive ties to form a unified text. It was pointed out that Halliday and Hasan provide a taxonomy of the types of cohesive devices that one can employ to internally bind together a spoken or written text. (See Cohesion in English, pp. 333-338.) It would be helpful to examine briefly each main type with its principal subtypes. (These subtypes can be broken down even further, as the reader will notice on the Cohesion Charts of the analyses of data.)

a. Reference: coded as R, subcategorized as follows:

1) pronominal (R_1) e.g., he, him, their, etc.

2) demonstrative (R_2) e.g., this, these, that, etc.

3) comparative (R_3) e.g., same as, similar to, different from, etc.

By way of illustration, let us observe the use of a Reference pronominal type of cohesive tie between two sentences. The following example is taken from Halliday and Hasan. "Wash and core six cooking apples. Put them into a casserole." The item 'them' is the cohesive item referring

back to 'apples'. 'them' is classified as Reference prenominal and coded as R_1. (p. 2)

b. Substitution: coded as S, subcategorized as follows:

1) Nominal (S_1) e.g., one, the same, etc.

2) Verbal (S_2) e.g., do, be, have, etc.

3) Clausal (S_3) e.g., so, not

Let us look at the example of 'Peel six potatoes'. Do the same with six carrots. 'Do the same' acts as a substitute verb for 'peel' and ties the two sentences together in meaning.

c. Ellipsis: coded as E, subcategorized as follows:

1) nominal (E_1) e.g., 'Q: How many hours did you practice? A: Ten hours the first day and nine the next.'

2) verbal (E_2) e.g., Q: What are you doing? A: Nothing.

3) clausal (E_3) e.g., 'Speaker A: Everything is just fine. B: Yes.'

As is evident in the above examples, part of each answer remains unstated but is understood by the participants.

d. Conjunction: coded as C, subcategorized as follows:

1) additive (C_1) e.g., and, also, or, etc.

2) adversative (C_2) e.g. yet, though, only, but, etc.

3) causal (C_3) e.g., so, hence, because, consequently, etc.

4) temporal/spatial (C_4) e.g., then, next, before, after, etc.

Notice that Conjunction is not only the conjunction of grammar, but also adverbials and prepositionals which function as intersentence connectors.

e. Lexical: coded as L, subcategorized as follows:

1) same item (L_1) i.e., repetition of the presupposed item

2) synonym, near-synonym, or hyponym (L_2)

3) superordinate or subordinate (L_3)

4) collocation (L_5) of words that belong to a semantic environment

Items within a lexicon have varying degree of proximity to one another. For example, 'starve' and 'hunger' are more closely related semantically than 'running' and 'pie'.

These terms provide the basis for the analytical process used in the following cases. Let us see how these sets of relationships between items exert a unifying force withing a text.

Cohesion in Texts Produced by Bilingual Secondary Subjects

In order to illustrate the way in which a Subject might choose to build up a text cohesively in response to the topic "We should/should not draft people to serve in the army", let us examine an actual sample from the data. The markings (underlinings, parentheses, rectangles, and encirclings) are inserted by the researcher to indicate which items relate to one another most closely and can therefore be grouped.

[1](We) should draft people to serve in the army because they /can get spirence/ from the army [2]They/can learn how to use/a weapon or a computotor, fly a airplane, a boat..etc. [3]Then maybe the people didn't go to serve the army and(the president)call them to enjoy the army because there is a war [4]so the people/don't have spirence/. So they/can't know how to use/a weapon or/deffents/theirselfs etc. [6]So(we)should draft people to serve the army so they/can get all the spirence/[7]Because/with these spirences/the can able to go to the war.

Initial conjunctions in sentences are left unmarked here, even though they constitute a main type. Since this sample text is cohesive, not without problems however, one can argue that all the items are related semantically, and indeed they do fit into a set of semantic items appropriate to this situation, all presupposed by 'draft'. Nevertheless, some items are even more closely related to each other through properties such as pronominal reference, synonymity, and lexical collocation. The items in parentheses ((We), (the president)) are the agents in this text, the ones who do the drafting, and as such, they are more closely tied to each other in meaning than to the other items. 'the president' acts on behalf of 'We', so these two items function semantically as near-synonyms. The items inside the rectangles are also synonyms. The encircled items are related through pronominal reference. The items within the slashes relate to one another as hyponyms, that is, items for which a single item could be substituted throughout. The underlined items are related by collocation. Same-item reiterations are found in each semantic group. This Subject has used three main types of cohesive relations: Reference, Lexical, and Conjunction and has demonstrated the ability to form a cohesive text.

Written sample. Now let us take a look at the full analysis of another written text from the data on this same topic. Notice that the original raw data had to be separated into sentences so that it could be analyzed for intersentence ties. The conventions of sentence division were followed by the researcher, and wherever it was possible to treat the original text as written, no arbitrary sentencing was used.

TASK I, FORM A

SUBJECT #5

Original:

I think we should because we have to be ready just in case of a emergency and I know people like to serve their country and sometimes because is obligatory like in Mexico every eighting year old has to go to the army for at least a year.

Here in the United States young people wish to go to the Army because they know that they will learn more things like they would like to learn about computers How to fix airplanes and ships, cars

Arbitrary-sentenced form:

[1]I think we should because we have to be ready just in case of a emergency [2]and I know people like to serve their country[3]/and sometimes because is obligatory like in Mexico every eighting year old has to go to the army for at least a year.

[4]Here in the United States young people wish to go to the Army because they know that they will learn more things/[5]like they would like to learn about computers How to fix airplanes and ships, cars

We see a complete description of the cohesive process for this essay on Figure 3, the Cohesion Chart (borrowed from Halliday and Hasan, pp. 346-347).

COHESION CHART

TASK #I FORM A SUBJECT # 5

Sentence number	No. of ties	Cohesive item	Type	Distance	Presupposed item	Deviant form
2	7	and	$C_{4.3i}$	0	---	
		I	$L_{I.a}$	0	I	and (1)
		know	$L_{2.b}$	0	think	
		people	$L_{I.a}$	0	(E-'people' of S1)	
		to serve	$L_{I.a}$	0	(E-'to serve' of S1)	
		their	$R_{I.4c}$	0	people	
		country	$L_{5.b}$	0	(E-army), emergency	
3	6	and...because	$C_{I.4ii}$	0	---	and...because (3)
		obligatory	$L_{2.b}$	N_1	(E-draft of S1)	
		Mexico	$L_{3.b}$	0	country	
		every eighting year old	$L_{3.b}$	0	people	
		has to go	$L_{2.b}$	N_1	(E-draft)	
		the army	$L_{I.a}$	N_1	(E-the army)	
		at least a year	$L_{5.b}$	M_1	(E-draft), the army, to serve	
4	8	Here	$C_{2.3i}$	0	---	
		the United States	$L_{3.b}$	M_1	country	
		young people	$L_{I.a}$	0	eighting year old	
		wish	$L_{2.a}$	N_1	like	
		to go	$L_{I.a}$	0	to go	
		the Army	$L_{I.a}$	0	the army	
		know	$L_{I.a}$	N_2	know	
		they	$R_{I.4a}$	M_2	people	
		will learn	$L_{5.b}$	M_2	the army	

COHESION CHART

TASK #I FORM A SUBJECT # 5

Sentence number	No. of ties	Cohesive item	Type	Distance	Presupposed item	Deviant form
5	5	like	$C_{I.4ii}$	0	more things	like (1)
		they	$L_{I.a}$	0	they	
		would like to learn	$L_{I.b}$	0	will learn	
		computers	$L_{5.b}$	0	more things	
		How to fix airplanes, ships, cars	$L_{5.b}$	0	more things	airplanes,ships (1)

KEY TO THE ABOVE CHART (from top to bottom):

Under Type:

- $C_{I.2i}$ = Conjunction, additive, complex-emphatic, additive
- $L_{I.a}$ = Lexical, same item, identical
- $L_{2.b}$ = Lexical, near-synonym/hyponym, inclusive
- $R_{I.4c}$ = Reference, pronominal, plural, possessive (Deictic)
- $L_{5.b}$ = Lexical, collocation, inclusive
- $C_{2.3i}$ = Conjunction, adversative, contrastive, simple
- $L_{I.b}$ = Lexical, same item, inclusive
- $R_{I.4a}$ = Reference, pronominal, plural, non-possessive (Head)
- $C_{I.4ii}$ = Conjunction, additive, apposition, exemplificatory

Under Deviant Form:

(1), (2), (3) = problematic degrees, (1) being the least

Under Presupposed item:

E = Elliptical

Under Distance:

0 = Immediate presupposition, or referral back to an item in the previous sentence

M = Not immediate, the number indicates the number of intervening sentences in the chain of presupposition (mediated)

N = Not immediate, the number indicates the number of intervening sentences, a remote relationship in distance (non-mediated)

For the analysis in this research, the "Deviant form" column on the right was added, since it was also of interest to examine errors made by the Subjects. By categorizing each item (see Type column), giving the distance of each item from its presupposed item in a previous sentence (see Distance column), and identifying the presupposed item (see Presupposed item column), we can see the cohesive process at work, the building up of a system of interrelated parts. If you turn to the second page of the Cohesion Chart, you will find a key to (1) the coding of the types of cohesive items used, (2) the value given to the problem created in the message by a deviant form, and (3) the meaning of the coded distances between a cohesive item and its presupposed item. Notice that the items in the first sentence of a text are not considered to be cohesive items, but rather they are presupposed items, the antecedents for items which appear in subsequent sentences. Therefore, they do not appear in the Cohesive item column on the Chart, and we begin with the items in Sentence #2. All the distances for items in Sentence 2 are zero, because they all refer back to presupposed items in the previous sentence, Sentence 1.

Let us focus on the error analysis on the chart in the Deviant form column and on the Cohesion Chart Interpretation, Figure 4.

TASK I, FORM A

SUBJECT #5

Cohesion Chart Interpretation

Number of types of cohesive relations	10
Number of main categories of cohesive relations (out of a possible 5)	3
Number of kinds of distances between cohesive items (out of a possible 3)	3
Number of deviant cohesive forms	4

Discussion of problem areas:

S1. 'I think we should' leaves part of the verb in ellipsis (i.e. '. . . draft people to serve in the army').

S2. 'and' means 'Secondly' in this case (conjunction, temporal, correlative, sequential -- an internal connection). The latter is correlative, indicating that a second major reason is being presented and giving the reader an inkling of what will follow. In S1 the first idea might have been prefaced by 'first of all' which would have indicated the broad textual structure which the reader could have anticipated.

S3. 'and sometimes because' does not convey the correct meaning here. The writer means to place the following idea in apposition to the preceding statement which expresses the idea that he knows that people like to serve their country. He means to say 'For example, in Mexico. . . and they like to serve'. This would be presupposed by 'like to serve' in S2 and form a tie.

S3 and S4. 'every eighting year old' of S3 and 'young people' of S4 are classified as "Lexical, same item, identical" ($L_{I.a}$) with the presupposed item of 'people' instead of as subordinates ($L_{2.b}$). The reasoning behind the $L_{I.a}$ classification is that when we speak of drafting people, we are referring to people of this age group exclusively.

S4. In this case, 'Here' has more than just the deictic meaning. It also carries the function of an adversative contrastive conjunction. The writer is making another point to give further support to the main idea that people like to serve in the army. He says in S3 that serving is mere routine in Mexico. In S4 the contrast is made that serving in the United States army is continued education for young people.

S5. 'like' is exemplificative here and should be replaced by 'For instance' or 'For example'. 'airplanes, ships' do not collocate in the draft setting.

Conclusion:

This passage lacks elements of cohesion, especially in the area of the conjunction. S3 is troubling to the reader. This will be discussed further under Coherence.

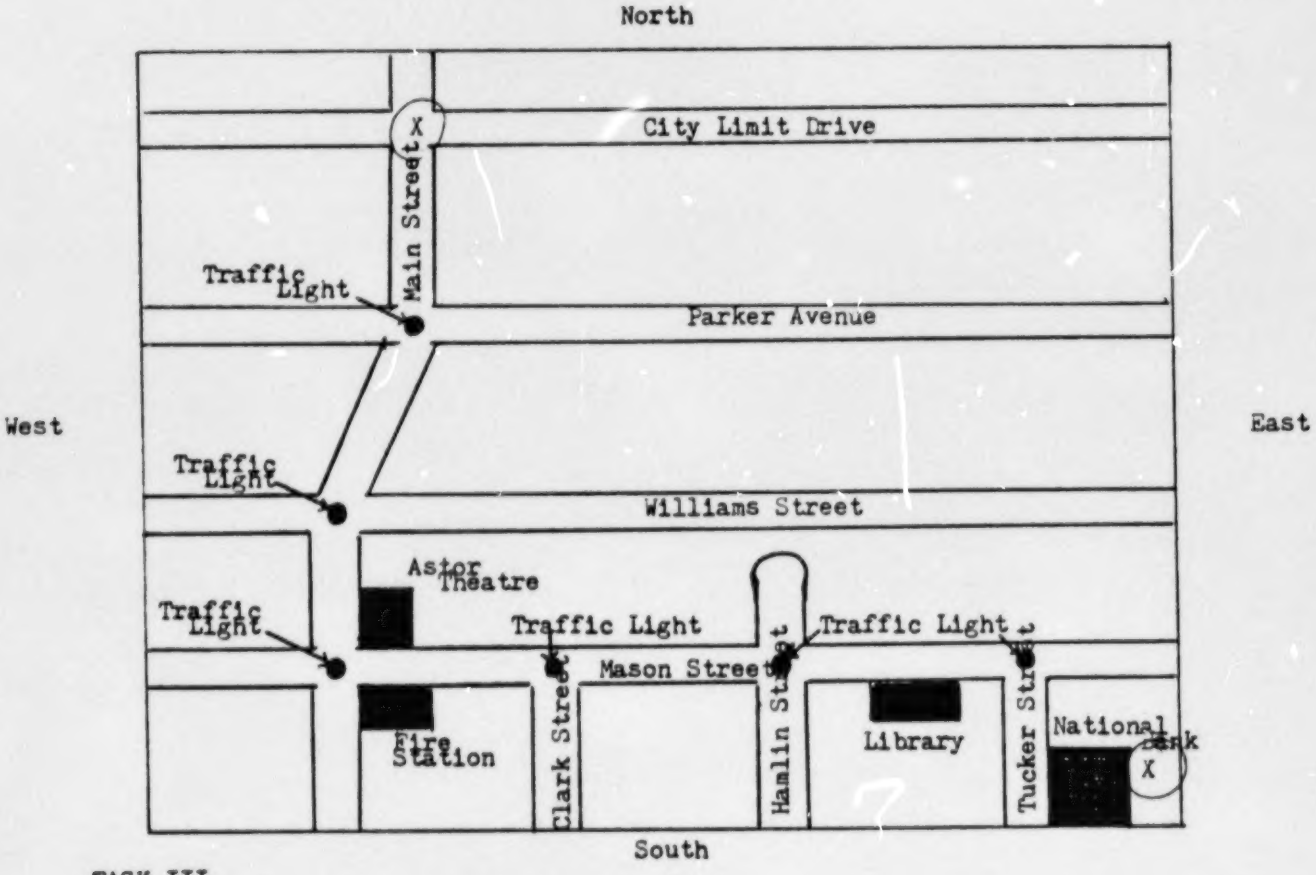
Notice that the use of 'and' instead of 'Secondly' at the beginning of Sentence 2 is given a problematic value of only one degree. The correlative conjunction is needed here, but the additive does not present a serious impediment in the message, since the additive 'and' can have weak correlative capability. In Sentence 3, however, the error in Conjunction selection causes the meaning to be conveyed. In Sentence 5 'like', a comparative item, is not completely wrong in meaning, since an example follows; but 'For example' would be more precise in this case. An error in collocation occurs in the last item. 'airplanes' and 'ships' have nothing to do with the army. There is a problem in concept here.

Oral sample. Orally produced text can be analyzed in the same manner. The map in Figure 5 was used to elicit an explanation of how to get from the corner of Main and City Limit Drive to the National Bank.

TASK II

FORM A

Directions: Look at the map below. Take time to understand it. Suppose someone stops you at the corner of City Limit Drive and Main Street and asks you how to get to the National Bank. What directions would you give him in English?
When you are ready to speak, press both the REC and the PLAY buttons at the same time on the tape recorder. Give your first name, for example, 'This is Juan speaking'. When you are finished giving your directions to the National Bank, press the STOP button.



TASK III
Repeat Task II only in Spanish.

(Adapted from the version presented in Diversity, 14, 1974. Boston: Houghton Mifflin Company, p. 94)

Using the map in Figure 5, a Subject gave the following description of the route to the bank. The oral performance was tape recorded and later transcribed.

TASK II, FORM A

SUBJECT #5

Original:

Go to south on Main Street, and then you stop at fire station. Then go to the left. On Mason Street three corners, and then stop. And the bank will be on the left side.

Arbitrary-sentenced form:

[1]Go to south on Main Street, and then you stop at fire station. [2]Then go to the left. [3]On Mason Street three corners, and then stop. [4]And the bank will be on the left side.

COHESION CHART

TASK #II FORM A SUBJECT # 5

Sentence number	No. of ties	Cohesive item	Type	Distance	Presupposed item	Deviant form
2	3	Then	$C_{4.11}$	0	---	
		go	$L_{1.c}$	0	Go	
		left	$L_{5.b}$	0	fire station, Main Street, south	
3	3	Mason Street	$L_{5.b}$	M_1	left, fire station, etc.	
		three corners	$L_{5.b}$	M_1	"	
		stop	$L_{1.c}$	N_1	stop	
4	4	And	$C_{1.11}$	0	---	
		the bank	$L_{1.a}$	N_2	(E - the bank from the eliciting question)	
		will be (located)	$L_{5.b}$	M_2	three corners, Mason Street, left, fire station, etc.	
		the left side	$L_{5.b}$	M_2		the left side (3)

KEY TO THE ABOVE CHART (from top to bottom):

Under Type:

$C_{4.11}$ = Conjunction, temporal/spatial, simple, sequential

$L_{1.a}$ = Lexical, same item, identical; $_c$ = exclusive

$L_{5.b}$ = Lexical, collocation, inclusive

$C_{1.11}$ = Conjunction, additive, simple, additive

Under Presupposed item:

E = Elliptical

Under Deviant Form:

(1), (2), (3) = problematic degrees, (1) being the least

Under Distance:

0 = Immediate presupposition, or referral back to an item in the previous sentence

M = Not immediate, the number indicates the number of intervening sentences in the chain of presupposition (mediated)

N = Not immediate, the number indicates the number of intervening sentences, a remote relationship in distance (non-mediated)

TASK II, FORM A

SUBJECT #5

Cohesion Chart Interpretation

Number of types of cohesive relations	5
Number of main categories of cohesive relations (out of a possible 5)	2
Number of kinds of distances between cohesive items (out of a possible 3)	3
Number of deviant cohesive forms	1
Degrees of deviation	3

Discussion of problem areas:

S3. Subject #5 has omitted the verb 'go'. Also, the native speaker would probably use the item 'blocks' instead of 'corners' here, but 'corners' gets the message across.

S4. 'the left side' has no presupposition, because Subject #5 has omitted part of the directions which would logically precede S4 -- that you turn right on Tucker Street. (This break in cohesion results in incorrect information, a coherence criterion.)

Conclusion:

There is a break in cohesion between S3 and S4, because of the omission of a sentence which would have furnished presupposition for S4.

During the charting process, one serious break in the message flow was sited in Sentence 4, leaving information in Sentence 4 dangling without a tie to previous information. A necessary step in the directions had been omitted, and by so doing this Subject had also omitted the presupposition necessary for cohesion.

Summary

We have seen how a method for the examination of cohesion in text, taken from Halliday and Hasan (1976), can be applied to the exploration of cohesive strategies used by second-language learners in the secondary school. This method of analysis is a classifying and charting process which allows for the recording of each type of cohesive device used, showing the relationships that exist within a text between semantic items from sentence to sentence. When no presupposition occurs, there is a break in the texture and the message flow is impeded.

This method of analysis provides a description of the integral network of semantic parts which characterizes a textual unit and isolates breaks in the network as they may occur in the performances of second-language learners. Obviously, it is more applicable as a research instrument than as a practical classroom tool because of the time required to categorize and chart every cohesive item in a text. However, in special cases wherein a teacher needs a close examination of a student's written or spoken work in order to identify specifically problematic points which otherwise remain elusive, the charting procedure can be very useful. Also, curriculum and materials developers could find this type of description of language production at the textual level to be of value in planning for second-language learners at various levels, especially in the inter-

mediate and advanced stages. Not only does the chart provide an error analysis, but it also shows the cohesive strategies known and used correctly. It shows where a student (or group of students) is in her/his development as a writer or speaker of the second language.

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